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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hidetsugu Motobe

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EXAMINER

MCCULLEY, MEGAN CASSANDRA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/559,556	Applicant(s) MOTOBE ET AL.	
	Examiner Megan McCulley	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arata et al. WO 00/37579 in view of Ongkosit (GB 2,362,037) in further view of Ekusa et al. (JP 2000-154232). As an English language translation of Arata et al., U.S. Pat. 6,558,797 will be referred to for the citations below. Also, as the English language translation of Ekusa et al., the computer generated translation will be referred to below.

Regarding claims 1 and 11: Arata et al. teaches an epoxy resin composition (abstract) comprising a non-halogenated bisphenol A or F epoxy resin (col. 2 lines 25-30) blended with a halogenated epoxy resin (col. 5 lines 25-37), a phenol novolac resin, specifically VH-4170 produced by Dainippon Ink (col. 10 lines 62-67) and a curing accelerator (col. 2 line 59).

Not disclosed are the two epoxy resins in an amount of 80-100% by weight of the epoxy resin, the brominated epoxy resin in an amount of 75-97% by weight of the epoxy resin and a total bromine content of 18-30%. However, Ekusa et al. teaches a mixture of a brominated and non-brominated epoxy resins (abstract) the non-brominated epoxy made up of bisphenol A epoxy (para. 15) which is a reaction product of bisphenol A and epichlorohydrin. The brominated epoxy is used up to 80% per 100% epoxy (para. 8),

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while the non-brominated epoxy is used in an amount of 15-30% per 100% epoxy (para. 9). Therefore, if 80% of the brominated is used and 15% of the non-brominated epoxy is used, then there is 95% of the instant epoxy (a) and (b) per the total weight of the epoxy resins. The brominated epoxy is used in an amount of 20-80% of the epoxy resin (para. 8), which overlaps the claimed range. Arata et al. and Ekusa et al. are analogous art since they are both concerned with the same field of endeavor, namely epoxy resin compositions for prepregs and printed wiring boards. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the epoxy resin mixture in the disclosed amounts with the disclosed properties of Ekusa et al. with the composition of Arata et al. and would have been motivated to do so for such desirable properties as the ability to use less solvent for environmental concerns while providing sufficient heat resistance, fire retardancy, viscosity and handling ability, as evidenced by Ekusa et al. (para. 5-9).

Arata et al. also does not teach the epoxy equivalent or the ratio of the n=0 component or the bromine content. However, Ongkosit teaches a similar composition wherein the preferable epoxy is DER530A80 (page 3 2nd paragraph), which has an epoxy equivalent of 427, an n=0 component of 28% and a bromine content of 23%. Arata et al. and Ongkosit are analogous art since they are both concerned with the same field of endeavor, namely epoxy resin compositions for adhesives of printed wiring boards. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the epoxy of Ongkosit with the composition of Arata et al. since Arata et al. and Ongkosit teach epoxy resins used for the same purpose, namely

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adhesives for printed wiring boards. Therefore the epoxy of Arata et al. and the epoxy of Ongkosit are equivalents known for the same purpose. It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose (see MPEP 2144.06 I. and 2144.07). Since the epoxies are equivalents for the same purpose and there are a finite number of identified, predictable epoxies given in each reference, a person having ordinary skill in the art would have recognized that the results of the combination were predictable and would have had good reason to pursue the known options within his or her technical grasp. See MPEP 2143.

Regarding claim 2: Arata et al. teach the phenol is a reaction of bisphenol A and formaldehyde (col. 2 lines 41-45). Arata et al. uses VH-4170 produced by Dainippon Ink (col. 10 lines 62-67) which has a bifunctional component of 25%.

Regarding claims 3, 4, 7: Arata et al. teaches inorganic filler, specifically silica (col. 5 lines 55-57).

Regarding claims 5, 6, 8-10: Arata et al. does not teach the prepreg or laminate made of the composition on a glass cloth. However, Ekusa et al. teaches a varnish with the composition and a solvent (para. 13), applying to a glass cloth/fabric and pre-drying/drying to B-stage before "piling up" on copper foil/forming a laminate and further curing (para. 15). At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the prepreg of Ekusa et al. with the composition of Arata et al. and would have been motivated to do so since the glass fabric reinforces the resin to be used in a laminate.

Response to Arguments

Applicant's arguments filed July 24, 2009 have been fully considered but they are not persuasive, because:

A) Applicant's argument that there is not motivation to combine the teachings of Arata et al. and Ekusa et al. is not persuasive and is addressed in the above rejection. Arata et al. does in fact teach both the brominated and non-brominated epoxy resins used together in a blend. The rejection above describes the motivation to use the amounts and epoxy equivalents found in the teaching of Ekusa et al.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Thursday 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/M. M./
Examiner, Art Unit 1796